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4. The apparatus of claim 1 wherein the collar is cemented to the cavity.

5. The apparatus of claim 4 wherein an RTV silicone bond cements the collar to the cavity.

6. The apparatus of claim 1 wherein the cavity spacer and the collar are formed of a material having a thermal expansion coefficient of under 10^{-7}K^{-1} .

7. The apparatus of claim 1 wherein the cavity spacer and the collar are formed of a material having a thermal expansion coefficient of under 10^{-8}K^{-1} .

8. The apparatus of claim 7 wherein the collar is formed of a glass ceramic material.

9. The apparatus of claim 8 wherein the collar material is heat treated and annealed.

10. The apparatus of claim 9 wherein the collar is formed via grinding the collar material.

11. The apparatus of claim 1 wherein the means for supporting the collar supports the weight of the collar from below.

12. The apparatus of claim 11 wherein the means for supporting the collar comprises:

at least three holes formed in the underside of the collar;
pins disposed within the holes and supporting the collar;
and

a base supporting the pins.

13. The apparatus of claim 12, further comprising holes formed in the top of the collar at an angular offset from the underside holes, such that the collar is substantially vertically symmetrical except for the angular offset.

14. The apparatus of claim 12 wherein the holes extend approximately to the centerplane of the collar.

15. The apparatus of claim 1 wherein the means for supporting the collar suspends the collar.

16. The apparatus of claim 15 wherein the means for supporting the collar comprises:

support bores formed vertically through the collar, the support bores wider at the bottom than the top;
wires having thicker retaining elements formed at their bottom ends, the wires threaded through the support bores such that the retaining elements are retained at catch points because of the narrowing of the support bores; and

means for suspending the wires.

17. The apparatus of claim 16 further comprising dummy bores formed vertically through the collar, the dummy bores wider at the top than the bottom, such that the collar is substantially vertically symmetrical except for an angular offset between the top half of the collar and the bottom half of the collar.

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18. The apparatus of claim 16 wherein the catch points are approximately at the horizontal geometrical midplane of the collar.

19. The apparatus of claim 1 wherein the geometrical horizontal midplane of the collar is aligned to the geometrical horizontal midplane of the cavity to within 1 mm.

20. The apparatus of claim 1 wherein the geometrical horizontal midplane of the collar is offset from the geometrical horizontal midplane of the cavity by about 0.1 mm.

21. The method of reducing the effects of vibration on a reference cavity having end mirrors and a spacer comprising the steps of:

forming the cavity spacer of a low thermal expansion material;

orienting the cavity vertically; and

supporting the cavity at its geometrical horizontal midplane, wherein the supporting step is accomplished by—
forming a collar of low thermal expansion material around the cavity spacer such that the geometrical horizontal midplane of the cavity is closely aligned with the geometrical horizontal midplane of the collar; and

supporting the collar such that the cavity is suspended from the collar.

22. The method of claim 21 wherein the wherein the cavity spacer forming step forms the cavity spacer of a material having a thermal expansion coefficient of under 10^{-7}K^{-1} and the collar forming step forms the collar of a material having a thermal expansion coefficient of under 10^{-7}K^{-1} .

23. The method of claim 21 wherein the wherein the cavity spacer forming step forms the cavity spacer of a material having a thermal expansion coefficient of under 10^{-8}K^{-1} and the collar forming step forms the collar of a material having a thermal expansion coefficient of under 10^{-8}K^{-1} .

24. The method of claim 21 wherein the collar forming step includes the step of forming the collar of a glass ceramic material.

25. The method of claim 24 wherein the collar forming step includes the step of heat treating and annealing the collar material.

26. The method of claim 25 wherein the collar forming step includes the step of grinding the collar material.

27. The method of claim 21 wherein the collar forming step includes the step of making the collar substantially vertically symmetrical except that features in the top half of the collar are rotated around the collar's axis from features on the bottom half of the collar.

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